

"GARVANZO CULTURE."

In the Great Yaqui Valley, Sonora, Mexico. A Growing Industry.

In all new regions opened to the pioneer settler, the question occurs, "what particular crop will these new fields produce that will insure us newcomers an immediate return from the plow-furrows we have just turned up to the sun?" In the Northwest of the United States, there is only one answer; i. e., "Spring Wheat." In the central areas, corn; in Colorado potatoes; in the Southwest, including California, alfalfa. On the Pacific slope of Mexico, and more especially in the miniature Nile Delta, the Yaqui Valley, Sonora, this ready-maker is the Garvanzo, and the Yaqui is its ideal home. Fortunately your correspondent is able to deal in accurate figures based on actual operations. General Lorenzo Torres of the Federal army of Mexico is the most successful farmer, as well as the most eminent soldier in the State of Sonora. His homestead, Gamouchil,—pronounced Bamouchil,—is the most noted garvanzo plantation in the State located a short distance from Potam, a stage station, with mail and commerce facilities, where the son of the General can be addressed. The latter, Aureliano Torres, is in charge of the plantation during his father's frequent absence. By courtesy of the man referred to, who is a thorough-going practical farmer, your correspondent is indebted for the following responsible details regarding garvanzo culture.

SELECTION AND PREPARATION OF GARVANZO GROUND.

Great care should be exercised in the selection of the ground, as the crop returns are mainly dependent upon that. Clayey soil is to be preferred, however, lands which have been bottoms of lagoons or swamps, when not too deep but rather extensive, are most suitable, even if such kind of soil be rather hard to break. The land must be irrigated freely. Experience shows that irrigation, to a depth of from 20 to 25 centimeters over ground, is preferable, as, with such a depth of water, the plant should not require another irrigation to grow and mature a crop. Immediately after the soil is irrigated and weeded, a deep plowing should be given, then the soil dragged to rid it of the weeds that may remain, and

finally, rolled, leveling it and breaking up the lumps as well as delaying evaporation.

PLANTING.

The seed is dropped into holes of not over three-eighths of an inch in diameter, and at a depth of not less than six inches the land being then ditched at right angles to the furrows of the first plowing, at a depth of not less than 9 inches this to permit irrigation of the plants at intervals as they approach maturity. The operation of planting, when lacking the proper implements, can be performed by hand,—a man following the plow and dropping the seed close to the upturned furrow, at distances of about two meters

PRUNING.

Within two months after being planted,—garvanzo grows very exuberantly on rich soil, spreading its branches out all over the ground and tangling one with another,—it will be found advisable to prune the plants so that the new shoots may grow upward, giving the plant a better appearance as well as increasing its production.

HARVESTING.

From four to five months later, the garvanzo has developed, gradually taking on a yellowish tint as it ripens and becomes ready for harvesting. The cutting of the crop is done by hand with sickles. The plants are cut off some five or six inches above the ground; the

Only two grades, or sizes, are suitable for export; the first grade should be of such size that fifty-four beans shall weigh thirty grams, the second that sixty-five beans shall weigh thirty grams.

If the planted seed weigh at a rate of forty-eight or fifty beans for each thirty grams, the crop will yield an average of 85 per cent first class garvanzo, 10 per cent to the second class, with a remaining 5 per cent which is not marketable, but is utilized for feeding stock, such as horses, cattle, and hogs, and it is found superior to corn or barley, while the straw makes excellent forage.

The threshing could be accomplished with much facility and economy, if a machine could be constructed similar to a bean sheller, but somewhat stronger, as the garvanzo is a larger and tougher plant than the bean. This machine would do away with the treading-out process, which is not only tedious, but hard on the animals as well. It would at the same time abolish the old-time method of separating the chaff by hand, depending upon the wind to blow it away, likewise, the slow method of grading by hand sieves.

However, notwithstanding the fact that the culture of this crop and its preparation for the market are carried on in so primitive a manner, the profits are very satisfactory. Let us back our assertion by figures, basing estimates on the produce of a hectare of land.

Expenses incident to the harvesting of a crop.

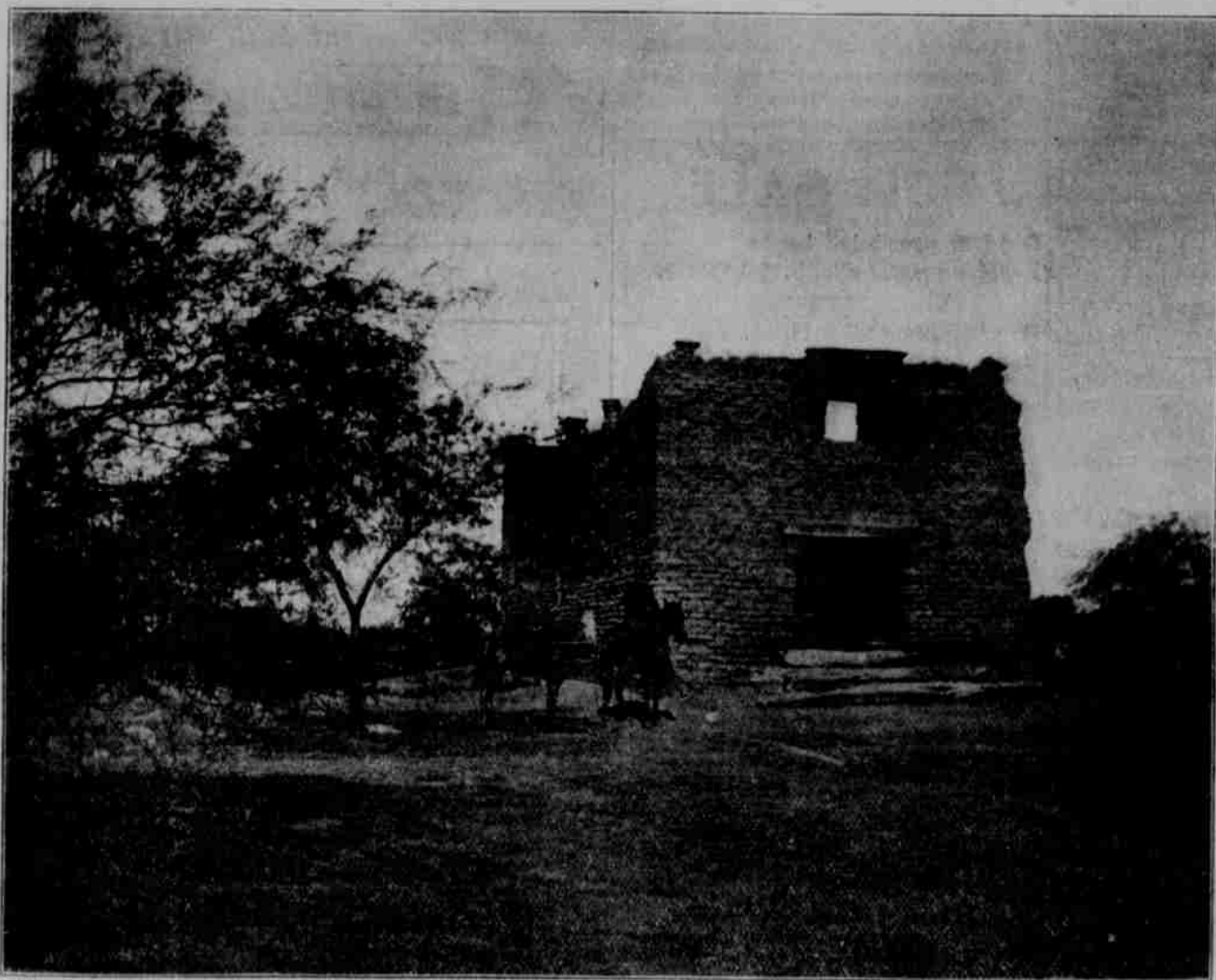
Clearing up of one hectare of land	\$1.00
Irrigation	1.75
Plowing	1.25
Dragging and rolling the ground	1.00
Cost of seeding	2.25
Ten kilos of seed at 10 cents	1.00
First weeding by cultivator	.75
Second weeding by cultivator	.75
Cutting	1.00
Stacking the plants	2.50
Threshing	5.00
Fanning	5.00
Grading	1.00
Transportation to Railway connection of 350 kilos 1st class garvanzo at 1/2 c. per kilo	4.25
Transportation to Railway points, of 100 kilos 2nd class garvanzo at 1/2 c. per kilo	.50
Ten empty sack	5.00
Incidental expenses	3.75
	\$36.55

Net proceeds from the crop.

350 kilos 1st class garvanzo at 8 c. kilo	\$28.00
100 " 2nd " " 5 c. " "	5.00
50 " 3rd " " 1 1/2 c. " "	.75
	73.75
	36.55
	\$37.40

From the above figures, there would result a net profit to the grower of \$37.40 per hectare of land.

RUINS OF CHURCH AT AGUAJE



apart. The furrows should be made one meter apart, and, after the planting is completed, the ground dragged to level out the furrows and delay the evaporation.

CULTIVATION.

In from six to eight days after planting, the garvanzo seed will sprout, and from fifteen to twenty days later, the first weeding or cultivation should be given, for which purpose a small five-point cultivator is used requiring one horse and a man. This is one of the most essential operations, as it kills the weeds on the ridge on each side of the plant and stirs up the soil facilitating the absorption of nutriment and moisture necessary to its development. One man with a cultivator does the work of ten working under the old system of weeding with a hoe. Should the garvanzo field become weedy the ground should be run over with the cultivator repeatedly until free from all such growth.

plants are then thrown into stacks some fifty feet high by 100 feet at the base, to dry for threshing.

THRESHING.

As soon as the garvanzo is stacked, it is ready for threshing. At the present time, the cheapest and most common way of separating the bean from the plant is by treading it out with horses and mules. A fence is built about the stack of plants at a distance of about three meters from its base, so as to allow plenty of room for the animals to run over the stack while a man is left to keep the plants stirred up that all may be trampled upon. It has been estimated that each animal will tread out some 2,000 kilograms of beans per day, there being one man for every five animals to keep the pile stirred and to remove the straw.

GRADING THE GARVANZO.

When cleaned, the garvanzo is graded according to size by means of sieves of consecutive sizes and put into sacks for the market.